

In the Claims:

This listing of claims, will replace all prior versions, and listings, of claims in the application:

Claims 1.-4. (Canceled)

5. (Original): A reference pattern for a reference surface of a disk connectable with a hard disk drive having at least one head positionable over the reference surface, comprising:

one or more servo wedges having a first end and a second end, the one or more servo wedges extending along a portion of a stroke of the at least one head and including:

a preamble extending from the first end to the second end;

at least one field extending from the first end to the second end and having:

a first set of a plurality of phase-bursts forming a positive chevron angle relative to the preamble;

a second set of a plurality of phase-bursts forming a negative chevron angle relative to the preamble; and

wherein a frequency of the at least one field relative to the head when the rotatable medium is rotated at a spin speed varies between the first end and the second end.

6. (Original): The reference pattern of claim 5, wherein the frequency of the at least one field between the first end and a transition region is a first frequency;

wherein the frequency of the at least one field between the transition region and the second end is a second frequency; and

wherein the transition region is between the first end and the second end.

7. (Original): The reference pattern for claim 6, wherein the preamble includes digital information at the first frequency relative to the head when the rotatable medium is rotated at the spin speed.

8. (Original): The reference pattern of claim 6, wherein the frequency of the at least one field abruptly changes from the first frequency to the second frequency.

9. (Original): The reference pattern of claim 6, wherein the second frequency is higher than the first frequency.

Claims 10-24. (Canceled)

24. (Original): A reference pattern for a reference surface of a rotatable medium connected with a data storage device having at least one head connected with an actuator, comprising:

one or more servo wedges having a first end and a second end, the one or more servo wedges extending along a portion of a stroke of the at least one head and including:

a preamble extending from the first end to the second end;

a first field extending from the first end to the second end and having:

a first set of a plurality of phase-bursts forming a positive chevron angle relative to the preamble;

a second set of a plurality of phase-bursts forming a negative chevron angle relative to the preamble; and

a second field extending from the first end to the second end and having:

a third set of a plurality of phase-bursts forming a positive chevron angle relative to the preamble;

a fourth set of a plurality of phase-bursts forming a negative chevron angle relative to the preamble; and

wherein a frequency of the first field relative to the head when the rotatable medium is rotated at a spin speed and a frequency of the second field relative to the head when the rotatable medium is rotated at the spin speed vary between the inner edge and the outer edge.

25. (Original): The reference pattern of claim 24, wherein the first field frequency between the first end and a first transition is a first frequency;

wherein the first field frequency between the first transition and second end is a second frequency;

wherein the second field frequency between the first end and a second transition is the first frequency; and

wherein the second field frequency between the second transition and the second end is the second frequency.

26. (Original): The reference pattern for claim 25, wherein the preamble includes digital information at the first frequency relative to the head when the rotatable medium is rotated at a spin speed.

27. (Original): The reference pattern of claim 25, wherein the first transition and the second transition are located at different radial positions.

28. (Original): The reference pattern of claim 25, wherein the first transition is located at a radial position closer to the first end than the second transition.

29. (Original): The reference pattern of claim 25, wherein the first transition is located at a radial position closer to the second end than the second transition.

30. (Original): The reference pattern of claim 25, wherein a transition region exists between the first transition and the second transition.

31. (Currently Amended): The reference pattern of claim 25, wherein one or both of the first field frequency and the second field frequency abruptly changes from the first frequency to the second frequency.

32. (Canceled)

33. (Original): The reference pattern of claim 25, wherein the second frequency is higher than the first frequency.

34. (Currently Amended): A reference pattern for a reference surface of a rotatable medium connected with a data storage device having at least one head adapted to be positioned over the reference surface, comprising:

one or more servo wedges having an inner edge ~~at an inner diameter of the reference surface~~ and an outer edge ~~at an outer diameter of the reference surface~~, the one or more servo wedges being disposed between an inner diameter of the reference surface and an outer diameter of the reference surface and including:

an inner ~~diameter~~ region extending from the inner edge to a first transition;

a transition region extending from the first transition to a second transition; and

an outer region extending from the second transition to the outer edge;

wherein at least a portion of each of the inner diameter region, the transition region, and the outer region, includes:

- a preamble;
- a first field, including:
 - a first set of a plurality of phase-bursts forming a positive chevron angle relative to the preamble;
 - a second set of a plurality of phase-bursts forming a negative chevron angle relative to the preamble;
- and
- a second field, including:
 - a third set of a plurality of phase-bursts forming a positive chevron angle relative to the preamble;
 - a fourth set of a plurality of phase-bursts forming a negative chevron angle relative to the preamble;
- and
- wherein in the inner region the first field is at the first frequency and the second field is at the first frequency;
- wherein in the transition region one of the first field and the second field is at the first frequency and the other of the first field and the second field is at the second frequency; and
- wherein in the outer region the first field is at a second frequency and the second field is at the second frequency.

35. (Original): The reference pattern of claim 34, wherein the preamble includes digital information at the first frequency.

36. (Original): The reference pattern of claim 34, wherein the first transition and the second transition are located at different radial positions.

37. (Original): The reference pattern of claim 34, wherein the first transition is located at a radial position closer to the inner edge than the second transition.

38. (Original): The reference pattern of claim 34, wherein the first transition is located at a radial position closer to the outer edge than the second transition.

39. (Currently Amended): The reference pattern of claim 34, wherein one or both of the first field frequency and the second field frequency abruptly changes from the first frequency to the second frequency.

Claims 40-67. (Canceled)